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Sexual behavior and sexual health of transgender women and men before treatment: Similarities and differences

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ABSTRACT

***Background*:** There is a lack of research on the sexual health of transgender individuals, as well as a paucity of data about overall sexual health indexes before treatment.

***Aims*:** This study aims to analyze the main issues involved in transgender individuals' sexual behavior (with and without a partner), overall sexual health indexes, and potential predictors of sexual health, comparing trans men and trans women on all the variables assessed.

Methods: 260 trans people were recruited at a transgender health clinic in Spain. Participants completed the Sexual Behavior Questionnaire for transgender people before receiving any treatment.

Results: Overall results show that trans women have a more ego-dystonic and problematic experience of their sexuality. Regarding masturbation, there are no differences in its frequency between trans women and trans men, although there are differences in the reasons they do not masturbate. Regarding sexual behavior with a partner, trans women experience more difficulties than trans men, with significant differences in several areas (e.g., the percentage of transgender individuals who never allow their partners to touch their genitals). Regarding sexual health, we found differences between groups, with lower sexual desire, sexual arousal without orgasm, and overall sexual health in trans women. Likewise, different variables such as pain during sex, fantasies, and time with a steady partner seem to be associated with the different sexual health indexes.

Conclusion: Our results show a clear difference between trans women and trans men in most of the sexual aspects assessed, revealing greater gender dysphoria in trans women. We would recommend taking these data into account, as well as variables that may be associated with different sexual health indexes, when designing interventions for transgender people.

KEYWORDS
Masturbation; partner; sexual behavior; sexual health indexes; transgender

Introduction

Sexuality can be considered a complex and diverse state that includes many different forms of expression and behaviors. The ability to express one's sexuality contributes to a sense of general well-being and health. In this context, sexual health, as a determinant and part of general health, is defined as "a state of physical, emotional, mental and social well-being in relation to sexuality; it is not merely the absence of disease, dysfunction or infirmity" (WHO, 2015). Specifically, sexual health is manifested through its expression of total respect for the other person, free of connotations and/or self-imposed demands. Thus, the individual may enjoy a satisfactory sexual response (in all its phases: desire, excitation, etcetera) while minimizing health risks, both physical and psychological. Both terms, sexuality and sexual health, are central issues linked to personal and social welfare. These topics have been widely researched in the general population, although some groups, such as transgender people, have been understudied. In terms of sexual health, transgender people can also be considered a vulnerable population because they face stigma, discrimination, exclusion, and violence, even in more

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tolerant parts of the world (Holmberg et al., 2019; Lindroth et al., 2017; Winter et al., 2016; Zeluf et al., 2016), as well as many other significant challenges related to their sexuality (Elaut et al., 2017; Nikkelen & Kreukels, 2018; Tree-McGrath et al., 2018).

As stated above, talking about sexual health implies addressing the sexual experience, that is, the expression of sexuality through sexual behavior. This aspect may be altered in vulnerable populations such as transgender people. In this context, when we talk about sexual behavior, we are referring not only to a sexual exchange with another person (either through coitus or mutual masturbation with or without objects), but also to behaviors linked to these sexual exchanges that may favor or harm sexual health, such as hiding one's genitals or not allowing one's partner to touch them. Few studies have researched sexual behavior in transgender people, especially before starting medical treatment (Cerwenka et al., 2014; Coleman et al., 1993; Fisher et al., 2013; Kraemer et al., 2010). Most studies have been carried out after gender-affirming medical treatment.

One of the main explanatory models of sexual behavior is the incentive motivation model. According to this model, sexual response integrates central cognitive affective processes and peripheral responses. For instance, feelings of sexual arousal motivate sexual behavior and feelings of desire, leading to orgasm (Basson, 2001; Holmberg et al., 2019; Toates, 2009). Likewise, in this model, classical conditioning is also included, which can affect sexual behavior. For example, it can increase or reduce subjective and genital sexual arousal (Brom et al., 2014; 2015). In this regard, the history of sexual experiences plays an important role in our sexual function. Specifically, a history of negative sexual experiences or a lack of positive ones can modify a sexual incentive toward a negative value. Applying this knowledge to our main topic, the discomfort or dysphoria caused by gender incongruence may lead to a negative sexual experience, as in the case of an orgasm associated with negative feelings, impeding desire, arousal, and orgasm (Holmberg et al., 2019).

As far as sexual behavior and experience are concerned, a European multi-center study (Cerwenka et al., 2014) that explores the sexual behavior of trans women and trans men prior to gender-affirming interventions shows that trans women and trans men do not differ in partner-related sexual experiences in terms of the involvement or avoidance of their genitals in sexual relations and the appraisal of genital sensations during sexual contact. However, these results related to the involvement of their genitals in sexual partner relations are not consistent with previous studies that indicated higher rates in trans women compared to trans men. Before treatment, trans women practiced active vaginal or anal penetration regularly (Selvaggi et al., 2007), whereas trans men frequently reported ignoring or hiding specific body parts when engaging in sexual activity with a partner (Coleman et al., 1993; Kraemer et al., 2010).

Regarding the appraisal of orgasm, a highly significant difference has also been found in response patterns between trans women and trans men (trans men tended to more frequently appraise orgasm as pleasant) (Cerwenka et al., 2014). Some differences have also been found in sexual arousal, with trans men showing higher frequency than trans women (De Cuypere et al., 2005).

Another relevant issue related to sexual behavior, although not necessarily linked to a partner, is masturbation. Some studies revealed no significant differences in masturbation between trans women and trans men (Cerwenka et al., 2014; De Cuypere et al., 2005), and no differences were found in lifetime masturbation fantasies between the two groups (Fisher et al., 2013).

Although different facets of sexual behavior have been considered in the scientific literature, there is still a lack of detailed information on this topic in transgender individuals, as well as a lack of information about overall sexual health indexes prior to medical treatment. This paper takes a step toward filling this knowledge gap by highlighting the main issues involved in sexual behavior (masturbation, reason for not masturbating, frequency of intercourse with penetration, letting the partner touch/look at their genitals, etc.), overall sexual health indexes (analyzing possible differences/correlations in some important variables, which may affect or condition sexual behavior, such as pain during sex, traumatic or stressful sexual experiences, having or not having a steady partner, etcetera), and potential

predictors of sexual health. Trans men and trans women were compared on all the variables assessed given the paucity of literature in this area.

Method

Measures

Two-hundred sixty patients completed the "Sexual Behavior Questionnaire for Transsexuals" (C.S.T.M.) (Bergero et al., 2012). This Spanish validated instrument consists of 73 items and allows a qualitative and quantitative evaluation in different domains of transgender individuals' sexuality. From the whole scale, those items considered relevant for the purpose of this study were chosen. Twenty-three of the items on masturbation and sexual behavior in partner relations are included in this study. The content of the *masturbation* items includes the following information: whether they have ever masturbated, and if so, the age of first masturbation; whether they continue to do so currently, and if so, the frequency of masturbation, if orgasm is reached, and the type of fantasies that accompany masturbation; if they do not masturbate, since when, and the reasons. Regarding *sexual behavior with a partner*, we ask whether there are parts of their body that they do not want to have touched, and if so, what they are; whether they undress completely in front of their partner, given that some transgender persons tend to hide their body because they feel ashamed of it; whether they allow their partner to look at their genitals and touch them, and whether the individual touches him/herself during the relation to become aroused or reach orgasm; whether they have had sex with penetration and how old they were the first time; whether they penetrated or were penetrated in that first relation; if that is what they do currently; frequency of intercourse with penetration, and whether they are satisfied with this frequency; who usually initiates sexual relations; and if they avoid having sex whenever they can. In addition to the twenty-three items, other items related to sexual orientation, traumatic or stressful sexual experiences, pain during sex, having or not a steady partner and time with a partner were included. This instrument also provides four indexes related to sexual desire, sexual arousal, orgasm, and satisfaction after sexual relations. All these indexes are responded to using a six-point Likert scale ranging from 0 (nothing) to 5 (maximum). Likewise, an Overall Sexual Health Index is obtained (as a result of the four indexes cited above), with an internal consistency (Cronbach's alpha) of 0.67. In all, 38 items were included in the study.

Procedure

Patients over 15 years and diagnosed with gender dysphoria at the transgender health clinic of the Regional University Hospital in Malaga (Spain) were invited to participate in this study, which is part of a larger evaluation protocol. The diagnosis of gender dysphoria was made in accordance with the current diagnostic category included in the DSM–5 (American Psychiatric Association, 2013). Exclusion criteria were having an active psychotic disorder or severe personality disorder. In order to be assessed by a clinical psychologist, each participant -or his/her parents if they were under 18 years old- signed the informed consent to participate. These evaluations were carried out before any hormonal or surgical treatment. The investigation was approved by the Ethics Committee of the aforementioned hospital and followed the principles of the Helsinki declaration.

Statistical analyses

The statistical analyses were performed with the statistical software IBM SPSS Statistics 24. Descriptive and frequency analyses were used to describe the basic characteristics of the sample and the main variables assessed. To carry out the differential analyses, Student's t test for continuous variables and the chi-square statistic for categorical variables were applied. Pearson's correlation analyses were also performed to determine the relationship between the overall sexual health indexes and some variables related to sexual behavior. Finally, to find possible predictors of sexual health, a multiple linear regression analysis was performed, including variables that were significant in the differential and correlational analysis as independent variables and the different sexual health indexes as dependent variables.

Table 1. Sexual orientation.

	Total		Trans women		Trans men			
	N	%	N	%	N	%	χ^2	Sig.
Sexual orientation							0.763	.683
Same sex	249	96.1	140	95.2	109	97.3		
The other sex	3	1.2	2	1.4	1	0.9		
Both without preferences	7	2.7	5	3.4	2	1.8		
Both with some preferences	0	0	0	0	0	0		
Others	0	0	0	0	0	0		

Results

The results are grouped in four sections of information: sample characteristics; masturbation; sexuality with partner; and, finally, the sexual health indexes, paying special attention to the overall sexual health index.

Two-hundred and sixty patients took part in the study. Of them, 56.5% (N = 147) were trans women, and 43.5% were trans men (N = 113). Participants were aged between 15-41 years, and the mean age was 27.8 (SD = 8.6), with no significant differences between trans women and trans men (p=.433). Most of the participants were single (76.4%), whereas 22.8% were married or living with a partner. Specifically, 35.4% of trans women and 62.2% of trans men defined their relationships as stable, and these differences were statistically significant (p=.000). In relation to their employment, 45.9% had a full or part-time job, 36.2% were unemployed, 1.2% were retired, and 16.7% were students at the time of their first clinical presentation, with no significant differences between trans women and men (p=.566). Regarding their sexual orientation, 96.1% were sexually attracted to members of the same birth sex; specifically, 95.2% of trans women and 97.3% of trans men were sexually attracted to members of the same birth sex, with no significant differences between them (p=.683) (Table 1). With regard to traumatic or stressful sexual experiences throughout the life cycle, the incest was experienced during childhood (8.6%), adolescence (7%), and adulthood (1.6%) with significant differences between trans women and trans men only in adolescence (p=.001). In relation to sexual abuse, 9.3% were victims during childhood, 14.8% in adolescence, and 7% in adulthood. Significant differences between trans women and trans men were observed in adolescence (p=.003) and adulthood (p=.004). Likewise, 2.7% of the participants were raped (sexual violence with penetration) during childhood, 4.7% during adolescence, and 4.3% as adults, with differences only found between the two groups in adolescence (p=.013). In very small percentages, the participant told an acquaintance about these acts or reported them. In all cases, the differences showed higher rates of traumatic experiences in trans women (Table 2).

As far as masturbation is concerned (Table 3), 77.6% have masturbated at some point in time. Trans women masturbated much more than trans men (84.4% vs 68.8%; p=.003), but they currently do so much less (36.5% vs. 53.3%; p=.012).

Regarding the frequency of masturbation, 39.1% of transgender individuals masturbate 1-4 times a week, 24.8% 2-3 times a month, 28.7% less than 2 times a month, and 7.4% daily. Although there were no differences in the frequency of masturbation (that is daily, 1-4 times a week, 2-3 times a month, less than 2 times a month) between trans women and trans men (χ^2=0.53; p=.947), when focusing on their reasons for not masturbating, differences between the two groups were observed (χ^2=22.36; p=.000). Trans women mainly did not masturbate because they did not like it anymore (33.8%), compared to 21% for trans men; the second most frequent reason in trans women was that their genitals disgusted them (27%) compared to 14.3% of trans men; and the third reason was a lack of sexual desire (17.6% in trans women and 10.7% in trans men). Analyzing the reasons for not masturbating in trans men, having a regular partner (42.9%) was the main one, compared to 5.4% in trans women; the second reason was that they did not like it anymore (21.4%), compared to 33.8% of trans women; and the third one, as in trans women (27%), was that

Table 2. Traumatic or stressful sexual experiences throughout the life cycle.

	Total		Trans women		Trans men			
	N	%	N	%	N	%	χ^2	Sig.
Incest								
Childhood	22	8.6	16	11	6	5.4	2.485	.115
Adolescence	18	7	17	11.6	1	0.9	11.288	.001
… Adulthood	4	1.6	4	2.7	0	0	3.117	.077
Sexual abuse								
Childhood	24	9.3	12	8.2	12	10.8	0.500	.479
Adolescence	38	14.8	30	20.5	8	7.2	8.907	.003
… Adulthood	18	7	16	11	2	1.8	8.118	.004
Rape (sexual violence with penetration)								
Childhood	7	2.7	5	3.4	2	1.8	0.627	.429
Adolescence	12	4.7	11	7.5	1	0.9	6.233	.013
… Adulthood	11	4.3	8	5.5	3	2.7	1.218	.270
He/she told someone s/he knows about the rape								
Childhood	2	3.4	1	3.4	1	3.3	0.001	.981
Adolescence	6	9.1	6	16.7	0	0	5.500	.019
… Adulthood	9	13.4	6	17.1	3	2.4	0.867	.352
He/she reported the rape								
Childhood	0	0	0	0	0	0	–	–
Adolescence	1	1.5	1	6.8	0	0	0.846	.358
… Adulthood	3	4.5	2	5.7	1	3.1	0.262	.609

Table 3. Masturbation.

	Total		Trans women		Trans men			
	N	%	N	%	N	%	χ^2/t	Sig.
Has masturbated at some time	201	77.6	124	84.4	77	68.8	11.98	.003
Age of first masturbation	M = 14.29	SD = 4.3	M = 13.9	SD = 3.6	M = 14.9	SD = 5.29	t=-1.62	.107
Current masturbation	99	43.42	50	36.5	49	53.3	6.30	.012
How long has it been since you masturbated? (months)	M = 49.98	SD = 60.17	M = 50.2	SD = 64.2	M = 49.3	SD = 47.59	t = 0.07	.947
Reasons for not masturbating							22.36	.000
Lack of sexual desire	16	15.7	13	17.6	3	10.7		
Does not like it	31	30.4	25	33.8	6	21.4		
Does not accept genitals, disgust	24	23.5	20	27	4	14.3		
Regular partner	16	15.7	4	5.4	12	42.9		
Does not feel the need	12	11.8	9	12.2	3	10.7		
Frequency of masturbation							0.53	.970
Daily	15	7.4	10	7.9	5	6.6		
1 to 4 times a week	79	39.1	48	38.1	31	40.8		
2-3 times a month	50	24.8	31	24.6	19	25		
Less than 2 times a month	58	28.7	37	29.4	21	27.6		
Orgasm in masturbation							1.66	.646
Never	7	3.4	3	2.4	4	5.2		
Hardly ever	31	15.3	19	15.1	12	15.6		
Most of the time	57	28.1	38	30.2	19	24.7		
Always	108	53.2	66	52.4	42	54.5		
Type of fantasies in masturbation								
None	17	8.4	10	7.9	7	9.1	0.08	.773
Make love with his/her partner	129	63.5	82	65.1	47	61	0.34	.562
Imagine him/herself making love with genitals of the opposite sex	137	67.5	81	64.3	56	72.7	1.55	.213
Experimentation	73	36	49	38.9	24	31.2	1.95	.378
Conquest and dominion	32	15.8	18	14.3	14	18.2	0.55	.460
Change of partner	6	3	3	2.4	3	3.9	0.38	.536
Group sex	4	2	4	3.2	–	–	2.49	.114
Voyeurism	3	1.5	3	2.4	–	–	1.86	.173
Violation	6	3	6	4.8	–	–	3.78	.052
Idyllic encounters	43	21.2	35	27.8	8	10.4	8.65	.003
Sadomasochism	1	0.5	1	0.8	–	–	0.61	.433
Fetishism	1	0.5	1	0.8	–	–	0.61	.433
Exhibitionism	1	0.5	1	0.8	–	–	0.61	.433
Others	5	2.5	4	3.2	1	1.3	0.70	.403

they were disgusted by their genitals (14.3%) (Table 3). Regarding the presence of orgasm during masturbation, 53.2% always referred to orgasm through masturbation with no differences between trans men (54.5%) and trans women (52.4%). Likewise, no statistically significant differences were observed in fantasies either. Only 8.4% of transgender individuals reported not having fantasies during masturbation (9.1% of trans men and 7.9% of trans women). The majority of

Table 4. Sexual behavior with partner.

	Total		Trans women		Trans men			
	N	%	N	%	N	%	χ^2/t	Sig.
There are parts of the body that they do not want to have touched	227	89.7	129	90.2	98	89.1	0.08	.771
What are they?							87.21	.000
Genitals	186	82.3	113	87.6	73	75.3		
Breasts	64	28.4	6	4.7	58	59.8		
Others	13	5.8	11	8.5	2	2.1		
Never undresses completely in front of the partner	130	56.3	74	55.6	56	54.9	0.01	.994
Never allows the partner to look at his/her genitals	145	61.4	79	59.4	66	64.1	1.59	.452
Never allows the partner to touch his/her genitals	151	64.3	94	71.2	57	55.3	6.82	.033
Touches him/herself during the relation to be aroused	55	23.4	31	23.5	24	23.3	1.15	.561
Touches him/herself during the relation to reach orgasm	51	21.7	28	21.3	23	22.3	1.85	.396
Has penetrative sex	203	80	123	84.9	80	73.4	30.08	.000
Age of first relationship	M = 18.1	SD = 4.52	M = 17.3	SD = 4.1	M = 19.5	SD = 4.9	t=-3.18	.002
At first relationship							79.95	.000
Penetrated	12	8.5	5	4.1	7	38.9		
Was penetrated	112	79.4	112	91.1	0	0		
Never penetrated and was never penetrated	17	12.1	6	4.9	11	61.1		
Currently							85.25	.000
Penetrates	11	8	4	3.3	7	38.9		
Is penetrated	107	77.5	107	89.2	0	0		
Indistinctly	4	2.9	4	3.3	0	0		
Never penetrated and is not penetrated	16	11.6	5	4.2	11	61.1		
Frequency of intercourse with penetration							17.61	.007
Never	14	6.3	3	2.4	11	11.6		
Once every three months or less	63	28.4	44	34.7	19	20		
1-2 times a month	45	20.3	28	22	17	17.9		
1-2 times a week	68	30.6	36	28.3	32	33.7		
Everyday	32	1.4	16	12.6	16	16.8		
Satisfied with the frequency	119	54.3	71	57.3	48	50.5	0.98	.322
Who usually initiates sexual relations							40	.000
Partner	65	28.9	50	39.7	15	15.2		
Myself	38	16.9	8	6.3	30	30.3		
Indistinctly	109	48.4	66	52.4	43	43.4		
Avoids having sex	124	49.6	84	59.2	40	37	12	.001
Fantasizes during sex	80	35.9	51	39.5	29	30.9	1.782	.182
Pain during sex	131	50.4	96	65.3	35	31	30.12	.000

trans people acknowledged the presence of fantasies, with the most frequent being imagining having sex with his/her partner (61% of trans men and 65.1% of trans women) and imagining having sex with genitals of the sex opposite to the one assigned at birth (72.7% trans men and 64.3% trans women) (Table 3).

Regarding sexual behavior with a partner (Table 4), trans women had a much more ego-dystonic and problematic experience of their sexuality than trans men. With "ego-dystonic experience" we are referring to one's behavior or attitude related to sexuality that is viewed as unacceptable or inconsistent with one's fundamental beliefs and values related to this topic. The percentage of trans women who never allowed their partner to touch their genitals reached 71.2%, compared to 55.3% of trans men, with significant differences (χ^2=6.82; p=.03). In addition, 59.2% of trans women avoided sexual intercourse (vaginal or anal), whereas the percentage of trans men who avoided intercourse was 37% (χ^2=12; p=.001). The same thing was true for the experience of pain during sex, with the percentage being significantly higher in trans women (65.3%) than in trans men (31.1%) (χ^2=30.12; p=.000). Likewise, the partner more frequently initiated sexual intercourse in the case of trans women (39.7%) than in trans men (15.2%). Only 6.3% of trans women initiated sexual relations, compared to 30.3% of trans men. That is, transgender women experienced a greater rejection of their genitals and did not want to be touched or start sexual relations with their partner. This rejection was lower in transgender men.

However, the most frequent sexual practice in the group of trans women was penetration. In this regard, there were significant differences between the two groups in having penetrative sex (insertive and receptive; using genitals and also sexual toys) (χ^2=30.08; p=.000); 84.9% of trans women did so, compared to 73.4% of trans men.

Table 5. Analysis of sexual health.

		Total		Trans women		Trans men			
	Range	M	SD	M	SD	M	SD	t	Sig.
Sexual desire scale	0-5	3.47	1.45	3.15	1.53	3.92	1.19	−4.32	.000
Sexual arousal without orgasm scale	0-5	3.60	1.41	3.16	1.48	4.19	1.07	−6.06	.000
Orgasm scale	0-5	2.59	1.92	2.46	1.87	2.77	1.98	−1.25	.213
Satisfaction after sexual intercourse scale	0-5	3.17	1.79	2.98	1.86	3.43	1.66	−1.92	.055
OVERALL SEXUAL HEALTH INDEX	0-20	12.84	4.96	11.76	5.22	14.38	4.13	−4.07	.000

The onset of sexual relations was also earlier in trans women, with a mean age of 17.3 years, compared to 19.5 in trans men (t=-3.18; p=.002). It should be noted, however, that 61% of trans men had not been penetrated now or at first relationship. The group of trans women had practically never penetrated in their first relationship (only 4.1% did so) or currently (3.3%). That is, transgender women were usually penetrated (91.1% in their first relationship and 89.2% at present), which means they had relations with cisgender men, women and/or trans men using sexual toys. In conclusion, the group of people born with male genitalia mostly had relations in which they were penetrated by men/or by a sexual toy, whereas the group of people born with female genitalia mostly did not penetrate and were not penetrated.

No differences were found in the fantasies during sex between trans women (39.5%) and trans men (30.9%) (χ^2=1.78; p=.182). Regarding satisfaction with the frequency, no differences were obtained either. Both groups were only satisfied around 50% of the time (57.3% in trans women; 50.5% in trans men). Moreover, there were no differences between groups in terms of their body image satisfaction because neither of them ever completely undressed in front of their partner (56.3%) or allowed him/her to look at their genitals (61.4%). All the results related to the total sample are shown in Table 4.

The fourth level of the study focused on the analysis of the sexual health of transgender persons (Table 5). They showed a mean of 12.84 (SD = 4.96) on the Overall Sexual Health Index (ranged 0-20). Regarding the other scales (ranged 0-5), transgender people showed a mean of 3.60 (SD = 1.41) on sexual arousal without orgasm, 3.47 (SD = 1.45) on sexual desire, 3.17 (SD = 1.79) on satisfaction after sexual intercourse, and 2.59 (SD = 1.92) on orgasm. We found significant differences between the two groups of transgender individuals evaluated on most of the scales used (Table 5). Trans women showed a lower sexual desire (M = 3.15; SD = 1.53) than trans men (M = 3.92; SD = 1.19), with statistically significant differences (t=-4.32; p=.000), and the same was true for sexual arousal without orgasm (t=-6.06; p=.000), with a mean of 3.16 (SD = 1.48) in trans women versus 4.19 (SD = 1.07) in trans men. This tendency, in general, was also found on the Overall Sexual Health Index, with a mean of 11.76 (SD = 5.22) in trans women and 14.38 (SD = 4.13) in trans men, and these differences between the two groups were significant (t=-4.07; p=.000). Nevertheless, the groups did not differ significantly on the orgasm scale or the satisfaction after sexual intercourse scale, although the means were higher in trans men (Table 5).

Analyzing the results for sexual health in greater detail, differences were found on some of the indexes depending on different variables; only statistically significant results will be reported below. Regarding pain during sex, the results showed differences only on the Sexual arousal without orgasm scale, considering the whole sample (t = 3.33; p=.001). The mean score was higher in participants who did not experience pain. Related to the presence or absence of fantasies during sex, and considering the whole sample, differences were found on the Orgasm scale (t=-3.37; p=.001), the Satisfaction after sexual intercourse scale (t=-2.47; p=.014), and the Overall Sexual Health Index (t=-2.06; p=.040). Likewise, the results showed statistically significant differences in the trans women group, particularly on the Orgasm scale (t=-3.14; p=.002), as well as differences in the trans men group, but on the Satisfaction after sexual intercourse scale (t=-3.21; p=.002) and the Overall Sexual Health Index (t=-2.46; p=.016). In all these cases, the

Table 6. Multiple linear regression analysis of variables associated with the different sexual health indexes.

Independent variables	Dependent variables															
	Sexual desire scale			Sexual arousal without orgasm scale			Orgasm scale			Satisfaction after sexual intercourse scale			Overall sexual health index			
	Beta [95% CI]	P value	Model R^2 (P value)	Beta [95% CI]	P value	Model R^2 (P value)	Beta [95% CI]	P value	Model R^2 (P value)	Beta [95% CI]	P value	Model R^2 (P value)	Beta [95% CI]	P value	Model R^2 (P value)
Pain	−0.78 [-1.35; -0.21]	.008	.129 (p=.036)	−0.74 [-1.34; -0.15]	.015	.149 (p=.017)	−0.57 [-1.37;0.22]	.155	.087 (p=.049)	−0.56 [-1.29;0.17]	.134	.087 (p=.049)	−2.94 [-5.06; -0.81]	.007	.127 (p=.043)
Fantasies during sex	0.11 [-0.48; 0.71]	.706		0.07 [-0.55; 0.69]	.820		1.12 [0.30; 1.95]	.008		0.99 [0.23; 1.74]	.011		2.37 [0.17; 4.57]	.035	
Age of first relationship	0.01 [-0.06; 0.07]	.819		0.03 [-0.04; 0.09]	.392		0.01 [-0.07; 0.10]	.779		−0.05 [-0.13; 0.03]	.229		0 [-0,23; 0.23]	.999	
Steady partner	0.13 [-2.52; 2.78]	.922		0.19 [-2.56; 2.93]	.893								2.15 [-7.58; 11.88]	.662	
Time with a steady partner	−0.06 [-0.12; -0.00]	.041		−0.08 [-0.14; -0.02]	.011								−0.14 [-0.36; 0.08]	.223	

highest mean score belonged to those trans people who had fantasies. In the case of having a steady partner or not, the results for the total sample showed significantly higher mean scores on the Sexual desire scale (t=-2.85; p=.005), the Sexual arousal without orgasm scale (t=-3.23; p=.001), and the Overall Sexual Health Index (t=-2.35; p=.020) in participants with a steady partner; and the same was true for the two first indexes in the group of trans men, that is, the Sexual desire scale (t=-2.73; p=.007) and the Sexual arousal without orgasm scale (t=-2.79; p=.006). No differences were found in trans women.

Considering the possible influence of the variables related to traumatic or stressful sexual experiences throughout life, mentioned above (incest, sexual abuse, and rape), differences were only found on the Sexual arousal without orgasm scale, with a higher mean score in people who had not experienced childhood incest (t = 2.39; p=.018).

When analyzing possible correlations between sexual health and the age of the first relationship, the results only showed statistically significant and negative correlations on the Satisfaction after sexual intercourse scale in both the total sample (r=-0.16; p=.034) and trans women (r=-0.24; p=.009). Significant and negative correlations were also found between the time with a steady partner and sexual health. In this regard, the longer the time with a steady partner, the lower the mean score on the Sexual desire scale (r=-0.23; p=.009) and the Sexual arousal without orgasm scale (r=-0.25; p=.006), considering the total sample, and only on sexual desire when considering trans men (r=-0.29; p=.017). No significant correlations were found in trans women.

Finally, in order to find possible predictors of sexual health, a multiple linear regression analysis was performed, including those that were significant in the differential and correlational analyses (pain, fantasies during sex, age of first relationship, having a steady partner, childhood incest, and time with a steady partner) as independent variables, and the different indexes of sexual health as dependent variables (Table 6).

Results related to the Sexual desire scale revealed that all the independent variables except childhood incest explained 12.9% of the variance (p=.036). Specifically, having pain (p=.008) and

a longer time with a steady partner (p=.041) were associated with less sexual desire.

In relation to the Sexual arousal without orgasm scale, and including all the independent variables, the results showed a model that explains 15% of the variance (p=.017). In this case, having pain during sex (p=.015) and a longer steady partner (p=.011) were also associated with lower sexual arousal without orgasm.

In the case of the Orgasm scale, we found a model that included pain, fantasies, and age of the first relationship as independent variables. This model explained 8.7% of the variance (p=.049). According to this model, the presence of fantasies was associated with a higher score on the Orgasm scale (p=.008).

Results for the Satisfaction after sexual intercourse scale revealed that the same independent variables included in the previous model explained 10.2% of the variance (p=.024). The presence of fantasies was associated with increased satisfaction (p=.011).

Finally, for the Overall Sexual Health Index, the results showed that all the above-mentioned independent variables, except childhood incest, explained 12.7% of the variance (p=.043). Particularly, experiencing pain during sex was associated with reduced overall sexual health (p=.007). By contrast, the presence of fantasies during sex seemed to be associated with increased overall sexual health (p=.035).

Discussion

Our results show a clear difference between trans women and trans men in most of the aspects evaluated in this study, with poorer sexual health found in trans women.

As far as masturbation is concerned, both groups show similar frequency rates, as well as the presence of fantasies, in line with previous studies (Fisher et al., 2013), which does not imply the absence of significant differences at other levels. Thus, our results show that trans women have been progressing from greater sexual activity alone to less and less activity currently for different reasons, such as genital dysphoria or having less sexual desire, and this occurs to a greater extent than in trans men. Trans women do not allow their partners to touch their genitals, they avoid sexual intercourse, and their partners usually initiate sexual intercourse. All of this shows a worsening in trans women's body image, which affects their partner relation more than in trans men.

Regarding experience and, especially, satisfaction with partner relations, our results differ from those found by Cerwenka et al. (2014) because these authors do not find differences in avoidance of the genitals or involvement in the relationship between trans women and trans men. However, our results are consistent with those obtained by some studies that also indicate a worse sexual experience in trans women (Cerwenka et al., 2014; De Cuypere et al., 2005).

Trans women have penetrative sex more frequently than trans men, and they also had their first relationship earlier than trans men. These results follow the pattern in the general population, where boys assigned at birth engage in sexual activity earlier than girls (Barragán et al., 2019; Castro et al., 2011). Thus, the sex they were assigned at birth prevails in terms of the influence of current gender expectations on sexual development. Nevertheless, analyzing the data in depth allows us to verify that a high percentage of trans men have never been penetrated; and trans women have almost never penetrated, neither in their first relation nor currently. In conclusion, the group of people with male genitalia mostly have relations in which they are penetrated, whereas the group of people with female genitalia mostly do not penetrate and are not penetrated.

Dissatisfaction with sexual activity and their body image, however, is similar in both groups. None of them undress completely in front of their partner or allow them to look at their genitals. These results are similar to those obtained in other studies where the authors found no gender differences in dissatisfaction with body image (Fisher et al., 2013), especially in trans people who have not had any gender affirming treatment but would like to (Nikkelen & Kreukels, 2018).

Low scores were obtained (around percentile 50) on practically all the sexual health indexes. Our results are consistent with the incentive motivation model, which proposes that different aspects of the transgender people's sexual health could be negatively influenced by gender

incongruence (Holmberg et al., 2019). This study shows the need to improve these indexes, particularly the orgasm index and the sexual satisfaction index, coinciding with previous studies (Bauer et al., 2013; Lindroth et al., 2017).

Likewise, it is also worthwhile to consider data from the cisgender population. In this regard, results on overall sexual satisfaction from a study on cisgender population carried out in Spain (Sánchez-Fuentes & Santos-Iglesias, 2016) show higher scores on sexual satisfaction than those obtained in our study with transgender people.

Additionally, our study provides another noteworthy aspect related to sexual health when comparing transgender women and transgender men. This comparative analysis leads to the same conclusions drawn in previous paragraphs about which group may experience poorer sexual health; that is, in our study, transgender women show less sexual desire, less sexual arousal without orgasm, and a lower Overall Sexual Health Index. The same is true for the Orgasm and Satisfaction after sexual intercourse scales, whose means are higher in transgender men. However, these differences between groups are not significant.

Therefore, our data support the notion that the group of transgender women has poorer sexual health, which may influence their sexual behavior. It would be interesting to take all these results into account in designing interventions that provide differential care for transgender people. They often experience discomfort in response to sociocultural pressures associated with gender. Understanding this gender diversity will help us to adopt more flexible attitudes toward transgender people, without having to accept the prevailing gender stereotypes.

In addition to this information, variables that seem to be associated with the different sexual health indexes are worth considering, such as pain during sex, fantasies, and time with a steady partner, because they can modulate the sexual health of transgender people.

It is important to bear in mind that we found no studies that compare the sexual health of trans women and trans men or examine possible predictors of sexual health, especially linked to different sexual behavior variables. Furthermore, most of the studies were carried out after treatment, making it difficult to compare our results.

Some limitations of this study have to be considered. First, the sample is not representative of all transgender individuals; therefore, the results may not be generalizable to other transgender people who do not use clinical services. Our participants attended the clinical service due to psychological discomfort, which does not characterize all transgender people. Second, the information collected is retrospective, and we know that reporting what is remembered when asked about past experiences is always subject to certain distortions. Third, despite guaranteeing participants complete confidentiality and anonymity, it is difficult to rule out that bias due to social desirability could have influenced certain responses.

Likewise, and in order to minimize this risk, future research should include information provided by the transgender individuals' partners, especially data related to sexual behavior with a partner, as a way of contrasting or outlining the information provided by the participants. In addition to this, information on the number of sexual partners in the past would be also interesting to be collected in further research.

This paper has used a binary approach assessing differences between transgender men and transgender women. The reason for this was that initially people who attended the transgender health service had to assign themselves to one or the other gender. Future research should also include gender diversity from the beginning of the process.

These limitations notwithstanding, the current study demonstrates strengths in the findings and contributes significantly to the knowledge about sexual health in understudied population.

These results increase the knowledge about aspects linked to greater discomfort in trans persons. These findings provide primary care professionals with key aspects to consider in the diagnostic interview, such as the decrease in the frequency of masturbation as a possible indicator of a low level of interest in sexual activity.

In addition to improving the protocols for evaluating the reasons for discomfort, some key points were obtained in this research that will help to design intervention programs to improve

the ego-dystonic experience. This would be the case of sexual fantasies because they have been associated with sexual satisfaction.

However, the result that may have the greatest impact on the work of clinical professionals is undoubtedly the importance of the gender variable. People of different genders have very distinct sexuality experiences for purely social reasons, and transgender individuals are not an exception. In this regard, among transgender people this differential experience is also manifested in differences between trans women and trans men. Therefore, evaluation and intervention protocols should take these differences into account, given that the experience of trans women has been more ego-dystonic. Moreover, trans women also experience lower levels of desire and arousal.

This paper has important implications for professionals in a variety of clinical and educational settings. These findings should also be part of stigma prevention programs in both the general population and in transgender groups.

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Conflict of interest

The authors declare that they have no conflict of interest.

Ethical approval

"All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards".

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